

below an altitude of 4000 feet. This bird has the actions and habits of several species. Like the Jays, it is at times noisy and in flocks; and when upon the ground it hops about in the same manner. It clings like the Woodpeckers to the side of a tree while it hunts in old excavations, interstices of the bark, etc., for the various forms of life found therein; and its flight is similar to theirs. In clasping with its sharp claws the cones on the pines, and other coniferous trees, in order to pry with its bill for the seeds, it often hangs head downward, swaying back and forth, with the ease and movements of the Titmice. It is a very shy bird, and at or near its nesting place, silent.

In May, 1879, my brother found the birds breeding near Fort Garland, Colorado; it was too late in the season for their eggs, but in one nest he found two young birds; he says the old bird sat very close, only leaving when touched by his hand. The nest was built near the end of a horizontal limb of a pine tree, about ten feet from the ground, in an open, conspicuous situation. It was bulky, and coarsely constructed of twigs, sticks, strips of bark, rootlets, grass, moss, etc., and very deeply hollowed the bird, when on it, showing only part of her bill and tail, the latter pointing almost directly upward. At a distance the nest would have been taken for a squirrel's nest.

Capt. Charles E. Bendire writes me that in the month of April, 1876-1878, he found in the vicinity of Camp Harney, Oregon, quite a number of their nests, similar to the one described above, at a height of from twenty-five to seventy-five feet from the ground, a few with eggs, and gives the following dimensions of four eggs: $1.30 \times .92$, $1.26 \times .95$, $1.22 \times .95$, $1.20 \times .90$ inches. He says the usual number is three; the ground color, light grayish green, irregularly spotted and blotched with a deeper shade of gray, principally about the larger end; the shape is elongated oval, considerably pointed at the smaller end.

The following birds, taken in the State, were in the Goss Ornithological Collection at the time of the publication of my Revised Catalogue.

Phalænoptilus nuttalli nitidus. FROSTED POOR-WILL.—A single specimen, a female, shot by me at Neosho Falls, September 23, 1881, entered as *Phalænoptilus nuttalli*, has been since identified as this form.

Grus canadensis. LITTLE BROWN CRANE.—This bird was omitted by oversight from the catalogue. It is not uncommon during migration.

BIRD NOTES FROM LITTLE GULL ISLAND, SUFFOLK CO., N. Y.

BY BASIL HICKS DUTCHER.

LITTLE GULL ISLAND is a member of the chain of islands that extends across the eastern end of Long Island from Orient Point, the northeastern extremity of Long Island, to Watch Hill, Rhode

Island. It lies between Great Gull and Fisher's Islands, about one fourth of a mile E. N. E. of the former, and four miles W. S. W. of the latter. Between Little Gull and Fisher's Islands runs the 'Race,' the principal channel for vessels passing into and out of the Sound.

Little Gull is probably one hundred yards long by fifty broad, and is composed of coarse gravel overstrewn with large bowlders. The light-house, with the dwelling house of the keepers, is built on a cylindrical turret of stone, about thirty-five yards in diameter and four high. The light is a fixed white light of the second order (burning three wicks), and is supplemented in foggy weather by a second class steam siren, giving blasts of five seconds duration, with intervals of forty seconds. The light is said to be visible seventeen miles, and the siren can be heard probably five or six.

Great Gull Island, situated W. S. W. of Little Gull, as described above, contains some fourteen or fifteen acres, and is composed of sand, with a shore line and broad outlying reef of rocks. The surface of the island is hilly, having an altitude of probably twenty-five feet at its highest point, and is covered by a growth of coarse grass, with here and there a small clump of bushes. In a hollow on the north side of the island is a small fresh-water swamp, dry and overgrown with cat-tails in the fall.

Great Gull Island was purchased by the Government to serve as a garden for the keepers of the Little Gull Light, but it was so overrun with mice that it was useless for that purpose. And now its sole use is as a breeding place for Terns and as a convenient and suitable spot for credulous people to search for the buried treasures of Captain Kidd.

I secured a specimen of the resident mouse, which proved to be a juvenile *Arvicola riparius*.

LIST OF BIRDS OBSERVED AT LITTLE GULL AND GREAT GULL ISLANDS, AUGUST 6-16, 1888.

1. *Stercorarius pomarinus*. POMARINE JAEGER, AND 2. *Stercorarius parasiticus*. PARASITIC JAEGER.—These species, taken together, were among the most common seen on the trip. From three to ten individuals could be seen any day at the fishing grounds, flying around among the Terns, chasing them about and compelling them to drop their fish. Every day on the 'slack' of the tides, when the bluefish bait seemed to be more abundant than at other times, the Terns would go over in crowds from

Great Gull to the 'Race' to fish, and though no Jaegers could be seen in the air before the arrival of the Terns, no sooner would the latter begin to fish than the Jaegers would gather around to pursue their regular business of robbery. As soon as a Jaeger would spy a Tern with a fish in its bill off he would start in pursuit, and dodge and dart as the Tern would, the Jaeger was always right in its track, pressing it closer and closer, until, despairing of ever eluding its pursuer, the poor Tern would drop the fish, which would be caught by the Jaeger before it reached the water. Although the Terns were swift and graceful flyers they were no match for their larger and more powerful enemies, who, when not engaged in pursuing the Terns, might sometimes be seen resting singly or in flocks of four or five on the surface of the water.

Chas. B. Field informed me that the Jaegers, or 'Hawks', arrived about the same time as the bluefish, and stayed as long as the bluefish were there, but that he never saw them in the winter.

When I arrived at Little Gull both Jaegers and Shearwaters were very tame indeed, not seeming to pay the least attention to us when we went out among them after bluefish; in fact, I was told that a bird of one of these species had, a short time before, been knocked down with an oar. But after we had shot three or four of them, they seemed to grow wilder. The Jaegers while on the wing keep the tail widely spread, in the shape of a fan, the long feathers, when the birds have them, being kept close together.

The Jaegers and Shearwaters could be easily distinguished from each other by their generally different appearance.

Two specimens of *S. pomarinus* and one of *S. parasiticus* were secured. Their stomachs contained fish-bones.

3. *Sterna hirundo*. COMMON TERN.—This species was by far the most abundant seen on the trip; the number of individuals I should estimate somewhere around five thousand. They were everywhere, at all times, and almost exclusively on the wing; it was a rare occurrence to see one at rest, and when one did alight it was almost always on the top of some rock, or on the surface of the water. Rest I suppose they did, but it must have been at night, since in the daytime, as I have said, they were always in motion. The condition of the rocks would also seem to indicate that they did roost at night, and that they used the rocks for that purpose, as the tops of the largest bowlders were completely covered with the droppings of the birds.

The Terns were very jealous of any intruders on Great Gull, no matter who they were. The angry birds would congregate in one large flock directly above the object of their wrath, and attempt to annoy him by every means in their power. They would scream at him, circle around him, then poise in the air, set their wings, and come down like a shot, as if to transfix him with their bills, then when within a few feet would suddenly open their wings and swerve off, only to repeat the performance again and again. While this holds true in every other instance, in the case of man the Terns had learned by sad experience that he was not to be approached

without cause, and, unless we should lie still for quite a while in the grass, or else shoot a Crow or an unwary and over-confident Tern for a decoy, our chances of getting many were not large. This unfortunate habit of worrying over whatever came in their way or even over their own dead, however, was fatal to them, for if we could by any means bring down one bird we could get all the others we cared for, by simply using the first bird as a stool.

Quite a number of nests were found, although not so large a number as I judged there would be, after seeing the birds. I suppose, however, that some of the birds were the 'young of the year' that had learned to fly. The nests were all on the west end of the island, none being seen on the other end, and but few on the upland. Most of the nests were built of the dried grass of the island, some having a few dried reeds mixed in with the grass, while those built just at the edge of the bank, where the sand was bare of stones, were merely the slightest depressions in the sand; the eggs being laid in the sand, I presume, to save the bird the trouble of building a nest, as most of the grass nests were among the rocks on the shore just above high-water mark. The quantity of material used in different nests varied up to about a pint. The number of eggs in different sets was generally from one to four; most of the nests having two or three, several one or four, and one, five. The eggs in a set of four, accidentally stepped on, were all perfectly fresh, while some nests found, contained both young and eggs together. The young, however, seem to stay but a short time in the nest, as all those obtained were running around and trying to hide among the rocks. In a nest found containing a young bird and an egg, the bird must have been out but a very short time, as it was still damp. No eggs were collected on account of the difficulty in identifying them.

The Terns, as far as I know, were never on their nests in the daytime, and Chas. B. Field said that he had never seen one sitting, night or day. The eggs could not be identified by their coloring either, as they varied all the way from white up to a burnt umber, and from having very few spots to being almost completely covered with them. One abnormal egg had a ground color of light blue. But four or five nests were found on the upland, and the ants were at some of these. I should not be surprised if ants were the cause of the birds breeding almost exclusively on the shore, as there was good building material on the upland, just as handy as that on the shore, if not more so.

4. *Sterna dougalli*. ROSEATE TERN.—The 'Rosettes,' as the Roseates are called at Little Gull, are there considered quite rare; the keepers informing me that few are ever shot in the course of a season. During my stay I noticed but five; only three of which I am absolutely certain were Roseates, as I had them in my hands; the other two, however, I feel justified in calling Roseates by the extreme purity of their breasts and bellies, by the length of their tails, by the darkness of their bills, and by the fact that they seemed fully grown in every respect. The habits of the Roseates did not differ, so far as I could see, from those of the Common

Terns, nor was there any separate colony of nests that might have belonged to the Roseates; all the birds seemed to nest together without discrimination as to kind. I set snares on several nests in the hope of catching the birds alive and so identifying the eggs, but was unsuccessful in every case. The snares, which were nooses made of thread, would be found in the morning beaten down; whether this was done accidentally or purposely by the birds I do not know; but it seems to me most likely that the Terns unwittingly pushed down the nooses with their feet as they settled on their nests. In the eighty-six nests examined, and there were probably over double that number on the island, the eggs all differed in such an endless variety of colors, that the Roseates' eggs could not be distinguished from those of the Common Tern.

But two specimens were secured.

5. *Puffinus borealis*. CORY'S SHEARWATER.—But two individuals of this species were noted, one of which was secured. The Shearwaters seemed always to keep in company with the Jaegers, and to be engaged in the same occupation,—that of robbing the Terns. In fact their habits all through were much the same as those of the Jaegers, although I cannot say positively that I ever saw one alight on the surface of the water. Speaking of the Jaegers and Shearwaters collectively, Chas. B. Field said that they stayed while the bluefish were there, but as he had not before distinguished one species from the other, he could not be certain whether only one stayed, or whether both remained. It is probable, however, that both remain all summer. The stomach of the specimen secured contained only fish bones.

6. *Oceanodroma leucorhoa*, or

7. *Oceanites oceanicus*. LEACH'S OR WILSON'S PETREL.—Petrels, one or both of these species, were very common in the 'Race,' or anywhere at some distance from land. But two individuals were noted near Little Gull, while farther to the north, out in the roadstead, they were very common, and rather wild. Most of those seen while I was crossing over to New London seemed to be feeding, and to be working westward at the same time.*

8. *Ereunetes pusillus*. SEMIPALMATED SANDPIPER.—An individual of this species was picked up dead at the foot of the tower on August 8, having killed itself against the Light during the night. Before I was ready to skin it the insects instituted a prior claim on the body, so the skin was not preserved. This individual was the only one seen on the trip.

9. *Actitis macularia*. SPOTTED SANDPIPER.—The 'Tip-ups' were very numerous, continually feeding around the shores of both islands, and at low tide flying along from rock to rock, stopping a moment on the top of each to pick up insects. I was informed that they bred on Great Gull, Chas. B. Field showing me a place where he found a nest in the earlier part of the season.

*Later.—Aug. 17.—Chas. B. Field secured and gave me a Petrel that proved to be the last-named of these species, thus warranting what has been said above to be true of Wilson's, if not of Leach's Petrel.

10. *Arenaria interpres*. TURNSTONE.—Flocks of these birds could be seen at almost any time flying around the islands, and alighting on the rocks to feed. They seemed to prefer the larger rocks to the shore, and especially those that were in the water. So common were the Turnstones on Great Gull that the Terns did not seem to pay the least attention to them. I presume the Terns had learned that the Turnstone, unlike almost every other visitor, did not go for the purpose of killing them or their young, or of robbing them of their eggs. Two specimens shot proved to be so fat as to render good skins impossible: in fact a few hours after they were killed the feathers of the breasts of both birds were matted with oil. The keepers at Little Gull consider these birds very pooreating, so never kill them for food.

11. *Circus hudsonius*. MARSH HAWK.—A single specimen was seen and secured on Great Gull, August 12. The bird was first flushed from the swamp, where he had probably been feeding. As we had no guns with us when he was first flushed, we left him undisturbed, but returned later in the day better prepared. As we approached the island a large flock of Terns were observed hovering over a small depression near the summit. We very cautiously approached the spot around which the Terns were flying, suspecting that they were worrying the Hawk. This conjecture proved true, but the bird was so engaged in feeding, or was so intimidated by the Terns, that he did not rise until we were within twenty feet of him; and then flew off very slowly, keeping within a few feet of the ground. Some cold lead, however, soon put an end to his career. In the stomach I found the remains of a mouse and of a Yellow Warbler. This Hawk is known at Little Gull as the 'Mouse Hawk.'

12. *Pandion haliaëtus carolinensis*. AMERICAN OSPREY.—Several individuals of this species were seen in Gardiner's Bay, while we were en route for Little Gull; and one or two were seen fishing around that island. It was the exception rather than the rule, however, to see them so far out; they seem to prefer to stay nearer the main land.

13. *Ceryle alcyon*. BELTED KINGFISHER.—Chas. B. Field informed me that he saw one around Little Gull early on the morning of August 12.

14. *Corvus americanus*. AMERICAN CROW.—Four unlucky Crows some time in the spring before the Terns arrived, decided to take up their residence on Great Gull Island. By what motives they were actuated I do not know. It might have been that they came in search of food, or they might have been seeking solitude. If the first conjecture be true they must have gotten plenty of that that they sought; for the island was well stocked with the eggs and young of the Terns. If the last conjecture be true they were sadly disappointed, for no sooner had the Terns arrived than they fell on the Crows and persecuted them relentlessly until we put an end to their misery. Leave the island they could not, for did one attempt to rise a horde of Terns was at him almost before he had risen above the grass, and screaming, diving, and dashing at the unfortunate bird, would soon drive him back to the earth again, and then, as if not content with that, would continue to worry him long after he had settled down.

The Crows were in a sorry plight indeed, for the Terns, not satisfied with worrying their victims at a distance, even went so far as to peck out the poor birds' feathers; and between the exuviae that the Terns had dropped upon them, and the light patches where the feathers had been picked out, the Crows presented a rather mottled appearance. From the upper mandible of one Crow a piece of the sheath and bone, half an inch long and an eighth deep, had been gouged out, undoubtedly by the lower mandible of a Tern. This incessant persecution had rendered the Crows so tame that we could always approach to within twenty-five feet of them before they would fly. And Chas. B. Field told me that on one occasion he caught one in his hand, the bird preferring rather to be caught by the man than to be chased by the Terns.

15. *Ammodramus maritimus*. SEASIDE SPARROW.—An individual of this species was found on the concrete, August 7, having struck the tower the night before.

16. *Melospiza fasciata*. SONG SPARROW.—This species was quite common on Great Gull, and could frequently be heard singing. It seemed to prefer the swamp and its immediate vicinity to the more elevated parts of the island. One specimen was shot from some bushes around the edge of the marsh.

17. *Chelidon erythrogaster*. BARN SWALLOW.—Almost every day while I was at Little Gull Island flocks of these birds could be seen on their southward migration. These birds and those of the succeeding species seemed, in their flight, to follow the line of the islands, from the mainland to Fisher's Island, from Fisher's to Little Gull, Little Gull to Great Gull, Great Gull to Plum, and so to Long Island.

18. *Tachycineta bicolor*. TREE SWALLOW.—All that has been said of the preceding species will apply also to this.

19. *Clivicola riparia*. BANK SWALLOW.—Although no birds of this species were seen, Chas. B. Field said that they had bred abundantly on Great Gull earlier in the season,—a statement that was well verified by the large number of holes in the sand banks that overlooked the shores of the island. Mr. Field also said that about as soon as the Swallows had dug out their homes, some folks, who should have been better employed, came over from Connecticut and amused themselves by digging out the holes that the Swallows had made, thus compelling the birds to excavate new ones.

20. *Mniotilta varia*. BLACK-AND-WHITE WARBLER.—A bird belonging to this species was picked up from the concrete August 9, having committed suicide against the tower the night before.

20. *Dendroica aestiva*. YELLOW WARBLER.—Standing on the concrete at the foot of the tower on foggy nights and looking upward, we could see around the lantern a broad halo of light, probably one hundred feet in diameter. Outside of this halo was total darkness. This phenomenon, I presume, was caused by the reflection and refraction of the light by the minute particles of water in the vicinity of the lantern; and the darkness beyond was due to the fact that very little, if any, of the small portion of

light that penetrated beyond the fifty-foot limit reached the eye. The migration, which had just begun when I arrived, could be splendidly observed by means of this patch of light. The birds could be seen flying to and fro in all directions, generally keeping within the ring, as if reluctant to leave the region of light and go into the darkness beyond. Although it would be an easy thing to distinguish the different families from each other in the strong light of the lantern, it would take a good deal of practice to tell the species apart. One species, however, was easily distinguishable as the birds flew back and forth,—the Yellow Warbler. It was, indeed, a pretty sight to see these birds flitting around, their yellow breasts and bellies illuminated by the rays from the lantern. I identified but one other species in the halo, the Redstart. Chas. B. Field said, however, that he could sometimes in the migrations distinguish Robins and Catbirds. He also remarked that in the fall migration all the birds struck on the W. S. W. side of the lantern, instead of on the E. N. E., as it might be supposed they would. All the birds that were picked up from the concrete were also on the W. S. W. side of the tower, showing that they very probably struck on that side. In the morning after every cloudy night, various Warblers, that had either been weakened by striking and had not the strength to go on, or had been caught by daylight and stopped to feed, would be seen flying around the shores of the island. Three species were thus observed, Black-and-white Warblers, Yellow Warblers, and Redstarts, of which the second species was most common. In fact the Yellow Warblers were seen on both Great Gull and Little Gull Islands. But few birds of any kind struck during my stay, probably because, although a number of the nights were foggy, none were stormy.

22. *Setophaga ruticilla*. AMERICAN REDSTART.—As remarked in the preceding note, one individual was observed flying around the light. Another was shot while it was feeding around the shores of Little Gull on the morning of the 8th.

23. *Merula migratoria*. AMERICAN ROBIN.—While after Terns one day, on Great Gull, Chas. B. Field saw a Robin, and although I did not see the bird myself I place perfect faith in his identification. He also informed me that Robins sometimes struck the light.

BIRD NOTES FROM LONG ISLAND, NEW YORK.

BY WILLIAM DUTCHER.

1. *Oceanodroma leucorhoa*. LEACH'S PETREL.—Three Petrels are included in Giraud's Long Island list, as follows: Wilson's, Fork-tailed, and the Least, the two latter being now known as Leach's and the Stormy Petrel. Mr. Lawrence included these, and added the Tropical